Water Column PCB Target for Staunton River TMDL Development

Current Virginia Water Column PCB Criterion = 1700 pg/L
Proposed Virginia Water Column PCB Criterion (9/2008) = 640 pg/L

- Potomac River TMDL Study revealed existing and proposed Virginia Water Quality PCB Criterion are not low enough to keep fish from accumulating unsafe levels of PCBs
- The same observation has been made on the Staunton River
- Require a site specific PCB target that once attained in the river will enable the removal of the PCB fish consumption advisory

Site Specific PCB Target

Accounts for localized conditions which can affect bioaccumulation

- ✓ Ingestion of prey
- ✓ Ingestion of contaminated sediment
- ✓ Through skin from contaminated sediment (e.g. bottom-feeders)

Utilizes site specific data

Proposed PCB Target for the Staunton River = 98 pg/L

Technical Explanation using a Bioaccumulation Factor (BAF)

Requires information on total concentration of PCB in fish tissue and total concentration of PCB in ambient water from the same location.

Derived by dividing the fish tissue screening value by some factor that represents the fish's ability to absorb and retain PCBs.

Measured in situations where both the organism and its food and environment are exposed to PCBs

2005 water data was correlated with fish tissue samples taken between 2004 and 2006.

The proposed PCB target for the Staunton River was calculated based on the Carp BAF.

Carp had the largest data set out of the species sampled.

Carp is listed for fish advisories including "Do Not Eat" restrictions for PCB for all sections of the Roanoke River by the Virginia Department of Health.